

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-004383**Date Inspected:** 28-Sep-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Sub-Assembly Bay 1:**

The QA Inspector randomly observed ZPMC welding personnel utilizing the Gas Metal Arc Welding (GMAW) and Submerged Arc Welding (SAW) Processes to weld the Production Monitoring Test (PMT) for Deck Plate 1AE-DP-585-001. The PMT commenced at 0020 on 09-29-2008. All relevant data was recorded on a separate PMT Tracking sheet.

The QA Inspector randomly observed ZPMC CWI Sun Wei performing a visual examination of the macroetch specimens from the PMT for Deck Plate 1AE-DP585-001. The QA Inspector also performed a visual examination of the above listed macroetch specimens. There appeared to be no indications and the depth of penetration appeared to be acceptable. ZPMC QC accepted the macro-etched specimens for 1AE-DP585-001. This was completed at 0738 on 09-29-2008. The attached photograph provides additional detail.

**Heavy Equipment Shop Bay 1:**

The QA Inspector randomly observed a ZPMC manual torch operators performing heat straightening operations to reduce mill induced distortion per ZPMC HSR1(T)-4590 and welding induced distortion per HSR1(T)-4587, HSR1(T)-4588 and HSR1(T)-4591.

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The QA Inspector randomly observed ZPMC welders Xu Xun Shui ID 040489 and Lu Hai Xian ID 040252, utilizing the Submerged Arc Welding (SAW) Process in the 1G (Flat Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2221-B-U3c-S-2 (CJP) and WPS-B-T-2321-B-P3-S-1 (PJP), to weld a butt splice on Skin Plate E at Weld Joint (WJ) Numbers SSD1-SA61A/G-13B (CJP) and SSD1-SA61G/G-12 (PJP). The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Jiang Jian Fei, monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail,

The QA Inspector randomly observed ZPMC welder Hua Gui Mei ID 050295, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld a butt splice on Skin Plate D at WJ's SSD1-SA20A/D-1A. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Xu Le Feng, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 690 amps, 32.5 volts with a travel speed of 595 mm per minute. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Xu Yan ID 052917, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld a butt splice on Skin Plate C at WJ's SSD1-SA20A/D-1A. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Xu Le Feng, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 674 amps, 32.5 volts with a travel speed of 587 mm per minute. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Lu Zhenhong ID 053673, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld a butt splice on Skin Plate C at WJ SSD1-SA171A/D-8B. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Xu Le Feng, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 640 amps, 32.2 volts with a travel speed of 539 mm per minute. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Hu Yongcang ID 203805, utilizing the Flux Cored Arc Welding (FCAW) Process in the 2G/2F Positions with ZPMC WPS WPS-345-FCAW-2G(2F)-Repair-1, to perform an in process weld repair per ZPMC Weld Repair Procedure T-WR290 on Skin Plate D at WJ SSD1-SA105-4B attaching a longitudinal stiffener to the skin plate. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Li Yanhua, monitoring weld parameters. The attached photograph provides additional detail.

The QA Inspector randomly observed 10 ZPMC welders, utilizing the FCAW Process in the 2G/2F Positions with ZPMC WPS WPS-4332-TC-P4-F1, to tack weld doubler plates to Skin Plate A (S). The QA Inspector randomly observed several ZPMC QC personnel monitoring weld parameters. The attached photograph provides additional detail.

Heavy Equipment Shop Bay 2:

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The QA Inspector randomly observed ZPMC welding personnel fitting up on Skin Plate E (E) and Skin Plate A (E) to each other and to 9M through 47.6M Tower Diaphragms.

The QA Inspector randomly observed ZPMC welder Cao Gui Mei ID 047304, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld a butt splice on Skin Plate C (E) at WJ ESD1-SA388A/D-8A. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Li Yang, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 650 amps, 32.6 volts with a travel speed of 600 mm per minute. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welder Yan Mei Zhen ID 042195, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld a butt splice on Skin Plate C (E) at WJ ESD1-SA388A/D-5A. The QA Inspector randomly observed ZPMC QC under the supervision of ZPMC CWI Li Yang, monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 654 amps, 32.5 volts with a travel speed of 595 mm per minute. The weld parameters appeared to comply with contract requirements.



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### Summary of Conversations:

As noted in the above body of this report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Franco,Charlie
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Quality Assurance Inspector
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<b>Reviewed By:</b>	Wright,Mark
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QA Reviewer
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